

Health Promotion Model with Community Participation for People at Risk of Hypertension

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BACKGROUND AND SIGNIFICANCE OF THE STUDY

Socioeconomic changes have resulted in changes in lifestyle of the population. It has become more evident that they smoke cigarette and drink alcohol more while exercising less. Also, they do not have appropriate food consumption behaviors, eating food that is not good for health, and this leads to major non-infectious diseases such as cardiovascular disease, hypertension, cancer, and mental health problems (Suchada Uppathawanich, B.E. 2550), which are considered important public health problems of the country at present. When the population is sick with chronic non-infectious diseases, the government has to spend a large amount of budgets on treatment. The World Health Organization has estimated that the circulation and fluid disorders account for approximately 10% of the direct costs of medical treatment of the Thai people, totaling 25,000 million baht (Chanpen Chuprapawan, B.E. 2543).

Hypertension is a chronic non-infectious disease that is commonly found and is considered one of the leading public health problems. This is because during the initial period, hypertension is asymptomatic, and about 35% of hypertensive patients are not diagnosed (Polaski, 1996 cited in Pranee Thongpila, B.E. 2543), hence the name 'silent killer.' Even in some diagnosed cases, the symptoms of hypertension are not evident, and some patients may overlook the necessity to perform correct health care. They are likely to seek medical attention after they experience complications such as critically high blood pressure, brain hemorrhage, as well as complications caused by damage of the target organs leading to more chronic complications including paralysis, myocardial infarction, heart attack, renal failure, etc. (Beever & MacGregor, 1987 cited in Somjit Hanucharunkul & Orasa Panphakdi, B.E. 2541).

There are two major causes of hypertension—hereditary factors and environmental factors. In fact, 90% of hypertension cases are primary hypertension (Somjit Hanucharunkul & Orasa Panphakdi, B.E. 2541). Major causes of hypertension include food consumption behavior, particularly intake of salty food, lack of exercise, stress, cigarette smoking,

alcohol drinking, and intake of coffee and tea (Suchada Uppathawanich, B.E. 2550). In the initial period, hypertension is asymptomatic, and the patients begin to seek medical treatment after their major organs have been damaged.

According to the statistics of the Ministry of Public Health, the numbers and rates of mortality in patients with hypertension and stroke between 2003 and 2007 were 34.5, 34.8, 29.2, 24.4, and 24.3 per 100,000, respectively (Bureau of Policy and Strategy, B.E. 2552). In addition, when considering the numbers and rates of mortality as categorized based on the causes (75 diseases), it was found that the number of patients with hypertension living in the northern region in 2008 was 984.043 per 100,000 (Bureau of Policy and Strategy, B.E. 2552). According to the statistics of service users at Baan Taa Nang-nagm Health Station, Bang Ragum District, Phitsanuloke Province in 2009, the number of patients with hypertension in the middle of 2008 was 420, making up 7.96%, and patients with a high risk of hypertension was 560, accounting for 24.38% (Report on Health Information of the Population, Ta Nang-ngam Health Station, B.E. 2552).

In addition to morbidity and mortality, hypertension also puts a burden on the family, community, and society. Furthermore, hypertension contributes to the country's economic losses required to cover the medical expenses. However, even though hypertension is a serious condition that is among major health problems of the country, it is preventable with health promotion. Individuals can adjust their lifestyles or their healthcare behaviors to comply with the goal of the Tenth National Economic and Social Development Plan that emphasizes development of human quality through physical and psychological development, dissemination of knowledge, and promotion of ability, functioning, and stability in life to increase their potential and ensure stability in family, community, and society. It also aims to reduce the rates of incidences of the five leading preventable diseases including heart disease, hypertension, diabetes mellitus, stroke, and cancer, hence a long-term decrease in healthcare expenses of individuals (Tenth National Economic and Social Development Plan, B.E. 2550-2554).

A community health center is a primary healthcare service provider which is closest to the community members. It provides healthcare

services on individual, family, and community levels, before, during, and after sickness. Put another way, a community health center offers physical, psychological, social, and spiritual care to ensure strength of the community. At present, the public health work emphasizes the significance of a community health center due to the health for all policy, decentralization, and government reform to increase efficiency and flexibility in operation. Thus, this can be seen as a good opportunity to adjust the roles of a community health center to solve problems with hypertension to cut down on medical expenses, shorten the duration of service provision, while at the same time implementing proactive policies on health promotion to ensure correct and appropriate self-care among the people, with an emphasis on primary prevention or health promotion among the healthy people and the people in a high risk group. This is regarded as a compliance with the Tenth National Economic and Social Development Plan that emphasizes development of physical being, psychological being, knowledge, capability, occupational skills, and stability in life so as to increase individuals' potential to strengthen the family, community, and society and to reduce the incidence of the five leading preventable diseases—heart disease, hypertension, diabetes mellitus, stroke, and cancer, hence a long-term decline in individuals' healthcare expenses. For this reason, the researcher was interested in implementing a health promotion model with community participation for people at risk of hypertension using the AIC process for adaptation of healthcare behaviors.

OBJECTIVES

1. To investigate the health promotion model with community participation for people at risk of hypertension
2. To explore participation of people at risk of hypertension and related organizations in the community
3. To examine knowledge, health beliefs, and self-care behaviors of people at risk of hypertension

RESEARCH METHODOLOGY

The present study was a participatory action research which involved the community in analyzing problems, planning, and solving problems with hypertension. It also aimed at raising the community's awareness of significance of health promotion and searching for a pattern or guideline to conduct health promotion activities in the community using the AIC (Appreciate-Influence-Control) process.

Setting

The research setting was Baan Yommaraj Village which is under the responsibility of Tambon Taa

Nang-nagm Health Center, Bang Ragum District, Phitsanuloke Province. Yommaraj Village is situated in Tambon Taa Nang-ngam, about 16 kilometers from Bang Ragum District and 20 kilometers from the center of Phitsanuloke Province. There are 124 households in the village, with the population of 381. The transportation from and to the village is convenient. The village selection criteria used in this study were as follows:

1. The incidence of hypertension was high, as determined based on the data of the Taa Nang-ngam community health center and Bang Ragum Hospital to confirm that hypertension was one of the problems faced by the community.
2. It was a village where healthcare staff members working at the health center were willing to cooperate and participate in the study to ensure convenience and participation in the research study.

Target Groups

The target groups consisted of the following:

1. People at risk of hypertension were individuals aged at least 35 years old whose results of initial screening indicated that they were at risk of hypertension but they had never been diagnosed with hypertension. They were willing to participate in the study based on the following inclusion criteria:
 - They had direct relatives who were stricken with hypertension.
 - Their body mass index was equal to or higher than 25 kg/m².
 - Their blood pressure was between 140/90 and 150/100 mmHg.
 - They had at least one of the following behaviors:
 - Smoking cigarettes.
 - Drinking more than 12 glasses of alcohol in one week.
 - Suffering from stress and taking relaxants or sleeping pills to cope with stress.
2. Related organizations were the following:
 - Community leader or committee members in Yommaraj Village
 - Members of Tambon Administration Organization of Yommaraj Village
 - Village public health volunteers and family health leaders
 - Staff members of Tambon Taa Nang-ngam community health center including two professional nurses and three healthcare staffs.

Research Procedures

The research procedures consisted of the following two phases:

Phase 1: Pre-research phase

1.1 The community was selected and studied to gain insight into the baseline data of the community and to confirm that hypertension was a problem in the community.

1.1.1 The researcher discussed with the Taa Nang-ngam community health center development committee to select a village to be the research setting. The selection criteria included the following—it was a village with a high prevalence rate of hypertension and the healthcare staffs in charge were willing to participate in the present research. The selected village was Yommaraj Village, Tambon Taa Nang-ngam, Bang Ragum District, Phitsanuloke Province.

1.1.2 The researcher explained the research procedures to the healthcare staffs of Taa Nang-ngam community health center who were willing to participate in the study.

1.2 The researcher familiarized herself with the community by learning about its customs and traditions, economic conditions, community leaders, and community history as well as participating in different activities held in the community so as to gain acceptance of community members.

1.3 The researcher conducted a survey to gather initial data of the village and screened for people at risk of hypertension among the community members who were 35 years old and older using the screening instrument of the Phitsanuloke Provincial Public Health Office. The researcher invited people at risk of hypertension to participate in the study and explained the research objectives to them.

1.4 The researcher prepared co-researchers who were five public health officials working at Taa Nang-ngam community health center responsible for solving problems of hypertension in the area. The researcher organized a meeting to explain the research objectives, co-researchers' roles, data collection procedures, screening of people at risk of hypertension in the population with the age of 35 years and older, and research instruments, especially the interview protocols, to ensure mutual understanding between the researcher and the co-researchers.

Phase 2: Research phase

The research phase consisted of three steps as follows:

Step 1: Planning of the AIC process

1.1 The researcher and the co-researchers conducted an interview of people at

risk of hypertension to elicit data regarding their knowledge, health beliefs, and self-care behaviors to disseminate knowledge and conduct initial assessments. A group discussion was also organized before a meeting was held to plan for the AIC process.

1.2 The researcher investigated and analyzed the problems to determine their causes and effects by carrying out a meeting with the community using a participatory process or AIC. The meeting was conducted in two days.

1.3 The researcher disseminated knowledge on hypertension and gave information regarding the incidence of hypertension in the community. The researcher also discussed risk factors and behavioral adaptations to prevent hypertension.

1.4 The researcher gave the target groups the opportunity to analyze problems of hypertension in the community.

1.5 The researcher integrated the concept of participatory learning by pointing out the benefits of the community's participation in the activities.

1.6 The researcher devised a working plan/project to solve the problems of hypertension in the community, with responsible parties clearly assigned, with feasibility and compatibility with the community members' ways of life taken into consideration.

Step 2: Implementation of the AIC process

The steps involved in the working plan/project derived from the participatory meeting (AIC) were implemented.

Step 3: Evaluation of the AIC process

1.1 The AIC meeting was assessed in terms of number of participants, atmosphere in the meeting room, interest of participants, and participants' opinions expressed during both small group discussions and the main meeting.

1.2 The implementation of the AIC process was assessed.

1.3 The knowledge of hypertension, health beliefs, and self-care behaviors of people at risk of hypertension were assessed using the questionnaire.

Data Collection

Both quantitative and qualitative data were collected in this study.

1. Quantitative data

1) The screening questionnaire was used with the population aged 35 years old and older in the community to collect baseline data to analyze problems of hypertension in the community.

2) The questionnaire was employed to elicit data regarding knowledge of hypertension, health beliefs, and self-care behaviors of people at risk of hypertension both before and after the implementation of the AIC process.

3) Tertiary data derived from reports on hypertension of Taa Nang-ngam community health center were also utilized.

2. Qualitative data

Qualitative data were collected through observation of participation in the AIC process of people at risk of hypertension and related organizations during the AIC meeting.

Research instruments

1. Instruments to collect quantitative data

The knowledge of hypertension, health beliefs, and self-care behaviors of people at risk of hypertension questionnaire consisted of the following four parts:

Part I: Demographic characteristics of people at risk of hypertension: This part elicited data regarding gender, age, marital status, educational background, occupation, family history of hypertension, chronic disease, and results of the screening of hypertension including body weight, height, body mass index, and blood pressure levels.

Part II: Knowledge of hypertension of people at risk of hypertension: This part was composed of nine response-type items. If the participants chose the correct answers, one point was given, but if the participants chose the wrong answers, no point was given.

Part III: Health beliefs of people at risk of hypertension: This part of the questionnaire consisted of 45 items arranged in a three-choice Likert scale of 'agree,' 'uncertain,' and 'disagree' for the participants to choose from. The items covered five aspects of health belief patterns, and the total score was 135 points.

Part IV: Self-care behaviors of people at risk of hypertension: This part of the questionnaire elicited data regarding dietary intake, exercise, stress management, and smoking and drinking behavior of the participants. The items were arranged in a four-point interval scale of 'always,' 'frequently,' 'sometimes,' and 'never' for the

participants to choose from to indicate their self-care behaviors.

2. Instruments to collect qualitative data

There were two instruments which were used to collect qualitative data in this study:

1) Observation form of the community participation in the AIC process was employed to collect data during the AIC meeting with the observation framework as follows:

- Presentation of concepts during the meeting
- Participation in the discussions during the meeting
- Acting as a consultant during the meeting
- Ability to analyze problems
- Ability to summary main points of the meeting
- Volunteering to take responsibility
- Ability to lead group members

2) A framework was also used to observe community participations when health promotion activities were organized in the community.

Validation of the instruments

1. As regards content validity, the knowledge of hypertension, health beliefs, and self-care behaviors of people at risk of hypertension questionnaire developed by the researcher based on a review of related literature and research was submitted to a panel of three experts to examine its content validity. The questionnaire was then revised and improved based on the comments and suggestions of the experts to ensure its appropriateness and clarity before it was tried out.
2. The revised questionnaire was tried out with 30 pilot subjects recruited from another village who were people at risk of hypertension and whose demographic characteristics were similar to those of the participants in the main study. Cronbach's alpha coefficient indicated that the reliability of the instrument was equal to 0.78.

Data Analysis

1. Data regarding demographic characteristics of the participants including gender, age, educational background, and family characteristics were analyzed by means of descriptive statistics of frequency and percentage. The mean scores of knowledge of hypertension, health beliefs, and self-care behaviors of

- people at risk of hypertension before and after the implementation of the AIC process were compared using paired t-test.
2. Qualitative data were categorized and summarized before presenting through description and discussion as they were in the actual situations.

FINDINGS AND RECOMMENDATIONS

1. Summary of findings

The present study was participatory action research which aimed at investigating the health promotion model with community participation using the AIC process. The knowledge of hypertension, health beliefs, and self-care behaviors of people at risk of hypertension were also explored. This is because hypertension is a major health problem particularly among the people who are 35 years old and older. The present study was conducted based on the assumption that once the community members understood the problems of their community, they would find ways to solve problems by themselves. The present study was conducted at Yommaraj Village, Tambon Taa Nang-ngam, Bang Ragum District, Phitsanuloke Province, where the incidence of hypertension continues to increase. Both qualitative and quantitative data were collected in this study. The former were collected through group discussions, participatory observation during the meeting to plan for the AIC process, and the implementation of the AIC process; the latter were gathered by means of the questionnaire constructed by the researcher based on the five aspects of the health belief pattern.

1.1 Health promotion model with community participatory for people at risk of hypertension consisted of the following:

1.1.1 Group discussion: A total of 84 people at risk of hypertension participated in the group discussion, whose contents included knowledge of hypertension and behavioral adaptation for self-care behaviors. A model who was a community member living with hypertension was presented to ensure clarity.

1.1.2 Meetings were organized based on the AIC process on two days—June 7 and 8, 2010. The participants of the meeting included village heads, village committee members, members of the Tambon Administration Organization, village health volunteers, staffs of Taa Nang-ngam community health station, and people at risk of hypertension who participated in the study. During the meetings, there were lectures to disseminate knowledge on hypertension, behavioral adaptation to prevent hypertension, and presentation of a model who was a patient with hypertension who also suffered from paralysis to ensure participants' understanding. A participatory

observation revealed that the participants took part in the analyzing and discussing the problems and offering suggestions. In addition, they were enthusiastic to develop health of the community members. The community leaders also had strength and determination to further develop the village. In the end, three health promotion projects were devised—the health knowledge dissemination project, the exercise public relations project, and the no drinking on religious days campaign project, each of which was taken charge by organizations in the community. The operations of the projects were continuously carried out as planned.

At three months after the meetings based on the AIC process were conducted and the projects in the health promotion model were carried out, knowledge, health beliefs, and self-care behaviors of the people at risk of hypertension were assessed. The findings were as follows:

1.2 Data regarding demographic characteristics of the people at risk of hypertension who participated in the study

The number of people at risk of hypertension who participated in the study was 84. Of these, more than half, or 57.14%, were male, and 42.86% were female. More than one-third, or 38.10%, were between 35 and 40 years old, with the mean age of 38.72 years. The youngest participants were 35 years old, accounting for 5.31% of the total participants, while the oldest participants were 72 years old, making up 3.57% of the participants. Moreover, most of the participants, or 83.33%, were married, and close to three quarters, or 73.81%, completed elementary education. In terms of occupation, 64.29% were agriculturists, and 17.86% were wage earners. More than three-fourths, or 78.57%, had an income between 2,000 and 5,000 baht per month. As regards hypertension, 17.86% of the participants had family history of hypertension, and 13.10% had begun to suffer from high blood pressure. Finally, close to half, or 41.67%, had their body mass index of 25 kilograms/m² or higher.

1.3 When comparing the mean scores of knowledge of hypertension, it was found that the mean score obtained after the implementation of the health promotion model was higher than that obtained before the implementation of the model with statistical significance ($p < 0.05$).

1.4 When considering the differences in mean scores of the five aspects of health beliefs—perceived risk, perceived severity of the disease, perceived benefits of self-care behavior, perceived barriers to self-care action, and health motivation, it was discovered that the mean scores obtained after the implementation of the health promotion model were higher than those obtained before the implementation of the model with statistical significance ($p < 0.05$).

1.5 When considering the differences in mean scores of the five aspects of self-care behavior—dietary intake, exercise, stress management, cigarette smoking, and alcohol drinking, it was found that the mean scores obtained after the implementation of the health promotion model were higher than those obtained before the implementation of the model with statistical significance ($p < 0.05$), except for cigarette smoking which showed no statistical significance. However, an interview of smokers revealed that the amount of cigarette smoking decreased after the implementation of the health promotion model.

1.6 The findings also showed that the mean body mass index after the implementation of the health promotion model was lower than that before the implementation with statistical significance ($p < 0.05$) but the differences were slight.

2. Recommendations

1. The AIC process should be used with problems or situations that are easy to understand by the general public and that are found in daily life to increase the efficiency and effectiveness of the plans and projects.
2. The AIC process is appropriate to raise community members' awareness of their problems and to encourage them to participate in devising solutions to their own problems. More importantly, the AIC process should be implemented on the basis of strong organizations to ensure continuity of implementation outcomes.

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